

ABSTRACT

The present invention is directed toward a detector structure, detector arrays, a method of detecting incident radiation, and a method of manufacturing the detectors. The present invention comprises several embodiments that provide for reduced radiation damage susceptibility, decreased affects of cross-talk, and increased flexibility in application. In one embodiment, the present invention comprises a plurality of front side illuminated photodiodes, optionally organized in the form of an array, with both the anode and cathode contact pads on the back side. The front side illuminated, back side contact photodiodes have superior performance characteristics, including less radiation damage, less crosstalk using a suction diode, and reliance on reasonably thin wafers. Another advantage of the photodiodes of the present invention is that high density with high bandwidth applications can be effectuated.